

REMARKS

Claims 1-62 are pending in this application. Claims 39, 43, 48, 52, 58, and 62 have been allowed. Claim 5 has been amended for clarification. A clean copy of all of the pending claims is attached to this Response as an appendix. The appended clean copy of all of the pending claims is provided only as a convenience to the Examiner and is not intended to be an amendment of the claims pursuant to 37 C.F.R. § 1.121.

Rejections under 35 U.S.C. § 103

The Office Action has rejected claims 1-13, 15-24, 26-38, 40-42, 44-47, 49-51, 53-57, and 59-61 as being unpatentable over U.S. Patent No. 5,073,442 to Knowlton *et al.* in view of U.S. Patent No. 4,116,885 to Derstadt *et al.* under 35 U.S.C. § 103.

Knowlton *et al.* discloses methods for enhancing the soil- and/or stain-resistant characteristics of polyamide and wool fabrics. The methods involve applying to the fabric a solution containing (1) a condensation product of formaldehyde with bis(hydroxyphenyl) sulfone, phenylsulfonic acid, dihydroxy diphenyl sulfone or benzene sulfonic acid and (2) a fluorochemical, an acrylic polymer or copolymer, or a modified wax emulsion. Knowlton *et al.* discloses “the addition of the fluorochemical improves oil and water repellency and improves antisoiling properties.” (Column 3, lines 19-21.) Similar to the fluorochemical, the modified wax emulsion is generally recognized as a hydrophobic, water-repellant material. Enclosed in Exhibit A is a description of paraffin, also referred to as paraffin wax, from Wikipedia. Paraffinic wax emulsion is disclosed in Knowlton *et al.* as a useful modified wax emulsion at column 2, line 3. Referring to Exhibit A, it is disclosed that paraffin is insoluble in water (*i.e.*, hydrophobic). The Office Action acknowledges that Knowlton *et al.* does not teach the use of zeolites or polyesters in the soil- and/or stain-resistant compositions. *See* page 3, lines 1-2 of the Office Action.

Derstadt *et al.* discloses detergent compositions for removing oily soils from hydrophobic fibers such as polyester. The detergent composition contains a soil release polymer composed of ethylene terephthalate groups and polyethylene oxide terephthalate groups. *See* column 4, lines

30-45. Derstadt *et al.* teaches “the addition of polyoxyethylene moieties to this hydrophobic portion tends to increase the water-solubility of the molecule as a whole.” See column 7, lines 65-67.) Derstadt *et al.* further discloses:

Since polyester and polyester blend fabrics, such as polyester/cotton blends, are popular and are susceptible to oily staining, manufacturers of polyester fibers and fabrics have sought to increase the hydrophilic character of the polyester, in order to provide ease of laundering for the consumer.

Column 2, lines 3-8.

Thus, it was known in the art to increase the release of oily stains from hydrophobic fibers such as polyester by making the fibers more hydrophilic.

Derstadt *et al.* also discloses the detergent compositions may include detergency builders. The detergency builders are used to maintain the pH of the detergent composition in the range of about 7 to about 12. *See* column 9, lines 22-26. Derstadt *et al.* also discloses at column 10, lines 12-26 that detergency builder materials such as aluminosilicates can be used in the detergent compositions.

The Office Action asserts that it would have been obvious to one of ordinary skill in the art to combine the polyesters and aluminosilicates (zeolite) disclosed in Derstadt *et al.* with the composition of Knowlton *et al.*, namely the modified wax emulsion, to render the present invention unpatentable. Applicants respectfully traverse the rejection.

Although Knowlton *et al.* and Derstadt *et al.* are generally related to soil- and stain-release, the methods for achieving these results are very different. In Knowlton *et al.*, hydrophobic materials such as modified wax emulsions are applied to fibers to increase the hydrophobicity of the fibers such that to prevent liquid spills from penetrating the fabric and subsequently staining the fabric. Indeed, Knowlton *et al.* teaches hydrophobic materials such as fluorochemicals improve oil and water repellency and antisoiling properties. Thus, Knowlton *et al.* motivates one of ordinary skill in the art to increase the hydrophobicity of fibers to impart soil- and stain-resistance.

Turning to Derstadt *et al.*, polyesters composed of ethylene terephthalate groups and polyethylene oxide terephthalate groups are used in detergent compositions to remove oily soils and stains from hydrophobic fibers. The polyethylene oxide terephthalate groups impart hydrophilic character (*i.e.*, water solubility) to the polyester. This is a required feature of the polyester because according to Derstadt *et al.*, the object of the invention is “to provide detergent compositions which inhibit the redeposition of soils onto fabrics during the laundering operation, and which additionally enhance the water absorption capacity of polyester garments.” See column 3, lines 33-37. Indeed, Milease T, a preferred polyester disclosed in Derstadt *et al.*, is a hydrophilic polymer. Enclosed in Exhibit B is product information about Milease T from Clariant, the manufacturer of Milease T. It is indicated in Exhibit B that Milease T is a hydrophilic polymer.

In view of the disclosures of Knowlton *et al.* and Derstadt *et al.*, one of ordinary skill in the art would not have been motivated to incorporate the polyesters disclosed in Derstadt *et al.* with the compositions of Knowlton *et al.* First, there is no suggestion or teaching in Knowlton *et al.* to use polyesters. Assuming, *arguendo*, that there was some teaching in Knowlton *et al.* to use polyesters, one of ordinary skill in the art would not have been motivated to combine the hydrophilic polyesters disclosed in Derstadt *et al.* with the hydrophobic materials of Knowlton *et al.* (*e.g.*, modified wax emulsions) to render the present invention obvious. If the polyesters disclosed in Derstadt *et al.* were incorporated into the compositions of Knowlton *et al.*, the hydrophobicity of the Knowlton *et al.* compositions would decrease and, thus, reduce soil- and stain-resistance of the fiber. This is not the objective of Knowlton *et al.* Thus, in the absence of any teaching or suggestion in Knowlton *et al.* to use polyesters, particularly hydrophilic polyesters, the present invention would not have been obvious in view of the combined teachings of Knowlton *et al.* and Derstadt *et al.*

Additionally, one of ordinary skill in the art also would not have been motivated to incorporate the detergency builders such as aluminosilicates disclosed in Derstadt *et al.* into the compositions of Knowlton *et al.* As discussed above, the detergency builders used in the detergent compositions of Derstadt *et al.* maintain the pH of the detergent composition in the

range of about 7 to about 12. Conversely, the pH of the compositions of Knowlton *et al.* is generally adjusted with citric acid to a pH of less than 7. *See* the Examples of Knowlton *et al.* For example, column 4, lines 42-47 of Knowlton *et al.*, provides the components of an anti-stain and anti-soil composition composed of modified wax emulsion, where the pH is 5 to 6. One of ordinary skill in the art would not have been motivated to use the detergency builders of Derstadt *et al.* to raise the pH of the compositions of Knowlton *et al.* above 7.¹ Therefore, the present invention would not have been obvious.

In addition to the arguments presented above, method claims 44-52 also would not have been obvious because Knowlton *et al.* and Derstadt *et al.* are silent with respect to imparting odor resistance to an article. Knowlton *et al.* is only concerned with imparting soil- and stain-resistance to a fiber, while Derstadt *et al.* teaches the use of detergent compositions to remove oily soils from fibers. In the absence of any teaching, suggestion, or motivation in either Knowlton *et al.* or Derstadt *et al.* to impart odor resistance to an article, the present invention would not have been obvious to one of ordinary skill in the art.

The Office Action has rejected claim 14 as being unpatentable under 35 U.S.C. § 103 over Knowlton *et al.* and Derstadt *et al.* as applied to claims 1-13, 15-24, 26-38, 40-42, 44-47, 49-51, 53-57, and 59-61 further in view of U.S. Published Application No. 2002/0142937 to Carter *et al.* As discussed above, one of ordinary skill in the art would not have been motivated to incorporate the polyesters and aluminosilicates (*i.e.*, detergent builders) disclosed in Derstadt *et al.* into the compositions of Knowlton *et al.* Therefore, assuming *arguendo*, it would have been obvious to combine the teachings of Carter *et al.* with Knowlton *et al.* or Derstadt *et al.*, the present invention still would not have been obvious. Applicants respectfully request the rejection be withdrawn.

¹ Comparative Example 10A of Knowlton *et al.* at column 11, line 45 tests a composition having a pH of 10; however, the example is silent with respect to how the pH was raised.

CONCLUSION

Pursuant to the above remarks, reconsideration and allowance of the pending application is believed to be warranted. The Examiner is invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

The fee in the amount of \$225.00 for the two-month extension of time has been filed electronically. No additional fee is believed to be due; however, the Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to Deposit Account No. 50-1513.

Respectfully submitted,

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